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Smith et al.

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(54) **SHOPPING CART**

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(51) **Int. Cl.**
B62B 3/14 (2006.01)

(52) **U.S. Cl.**
CPC ***B62B 3/1404*** (2013.01); *B62B 2501/067* (2013.01)

(58) **Field of Classification Search**
CPC B62B 3/14; B62B 3/1496; B62B 2501/067
USPC ..... 280/33.993, DIG. 4
See application file for complete search history.

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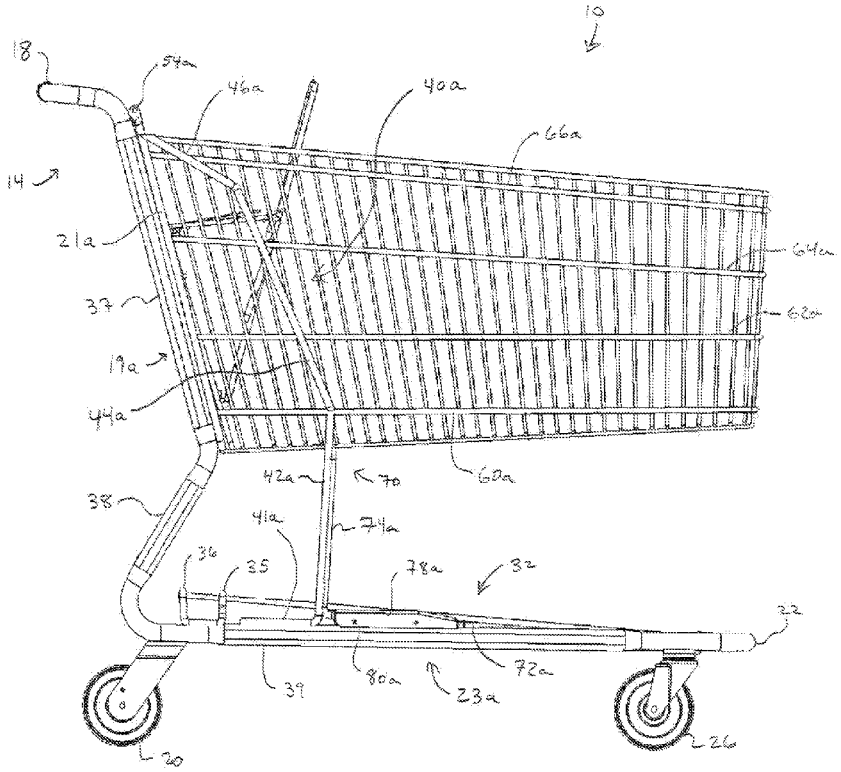
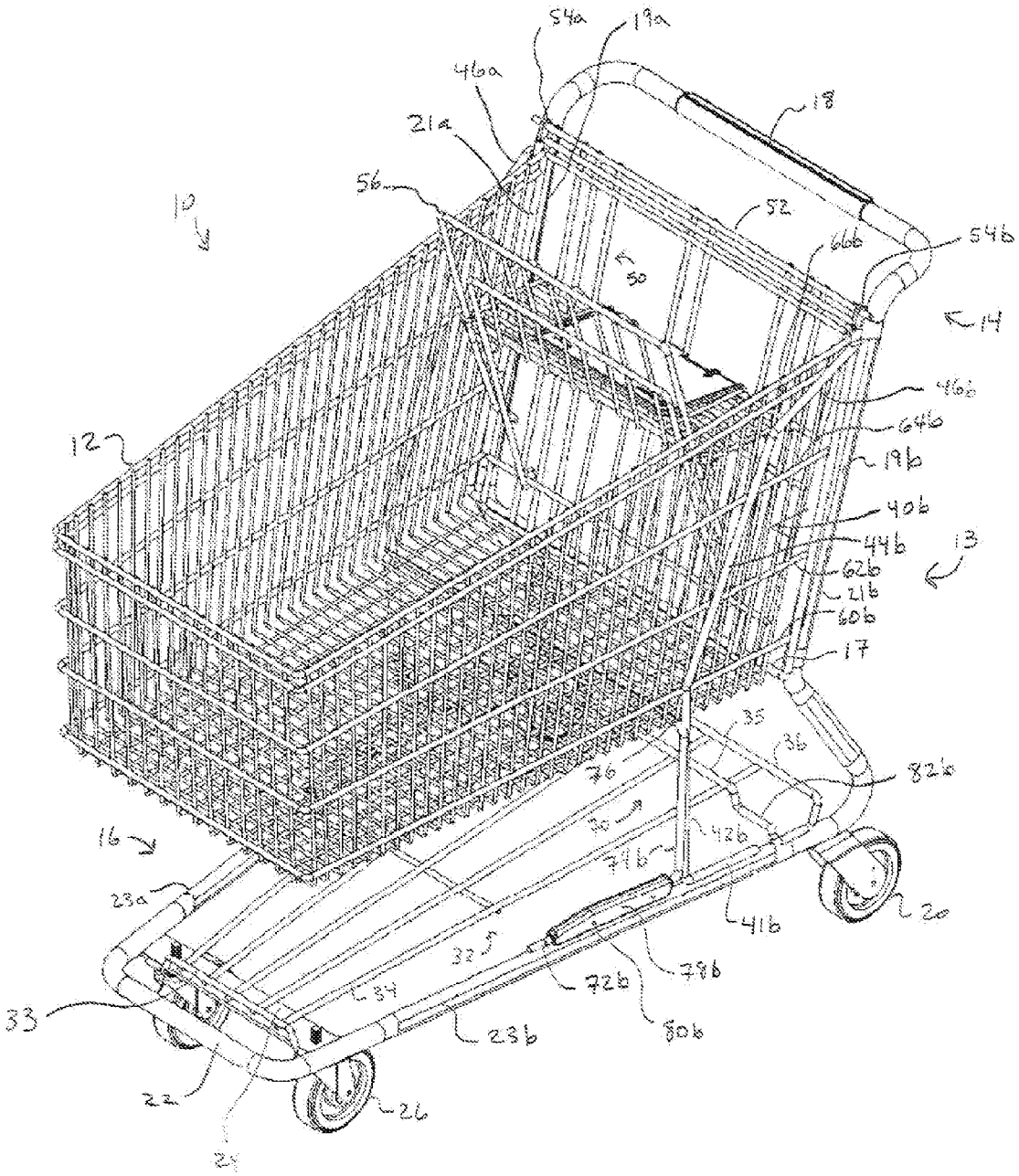
(57) **ABSTRACT**

A shopping cart features a frame forming a chassis portion and a handle portion. A number of casters are attached to the chassis portion while a basket attached to the handle portion. A pair of basket supports are positioned on opposite sides of the basket. The pair of basket supports include a pair of base portions connected to the chassis portion, a pair of forward tilting lower portions attached to the base portions, and a pair of rearward tilting upper portions attached to the pair of forward tilting lower portions.

19 Claims, 4 Drawing Sheets

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76
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Fig. 1

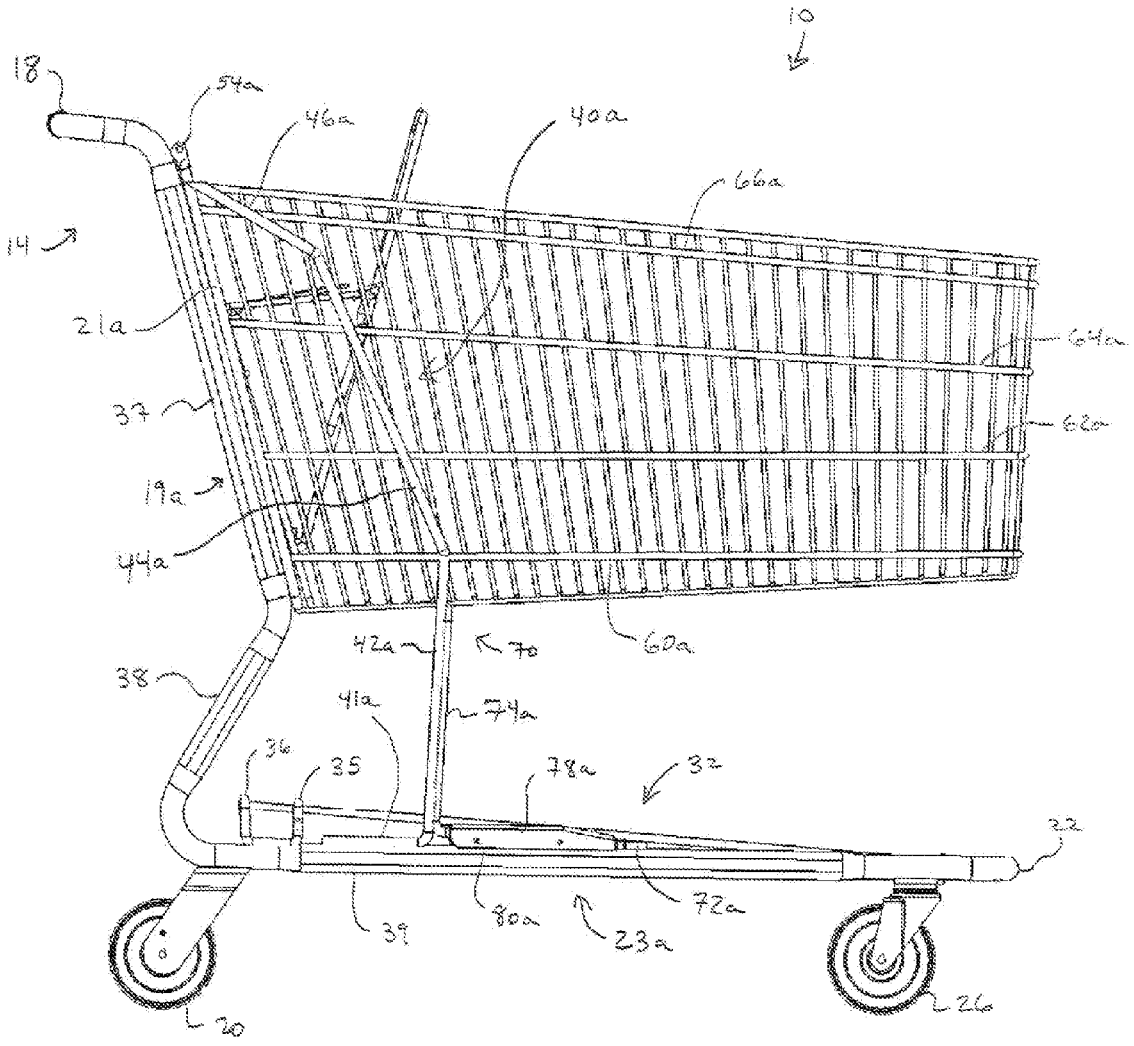
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Fig. 2

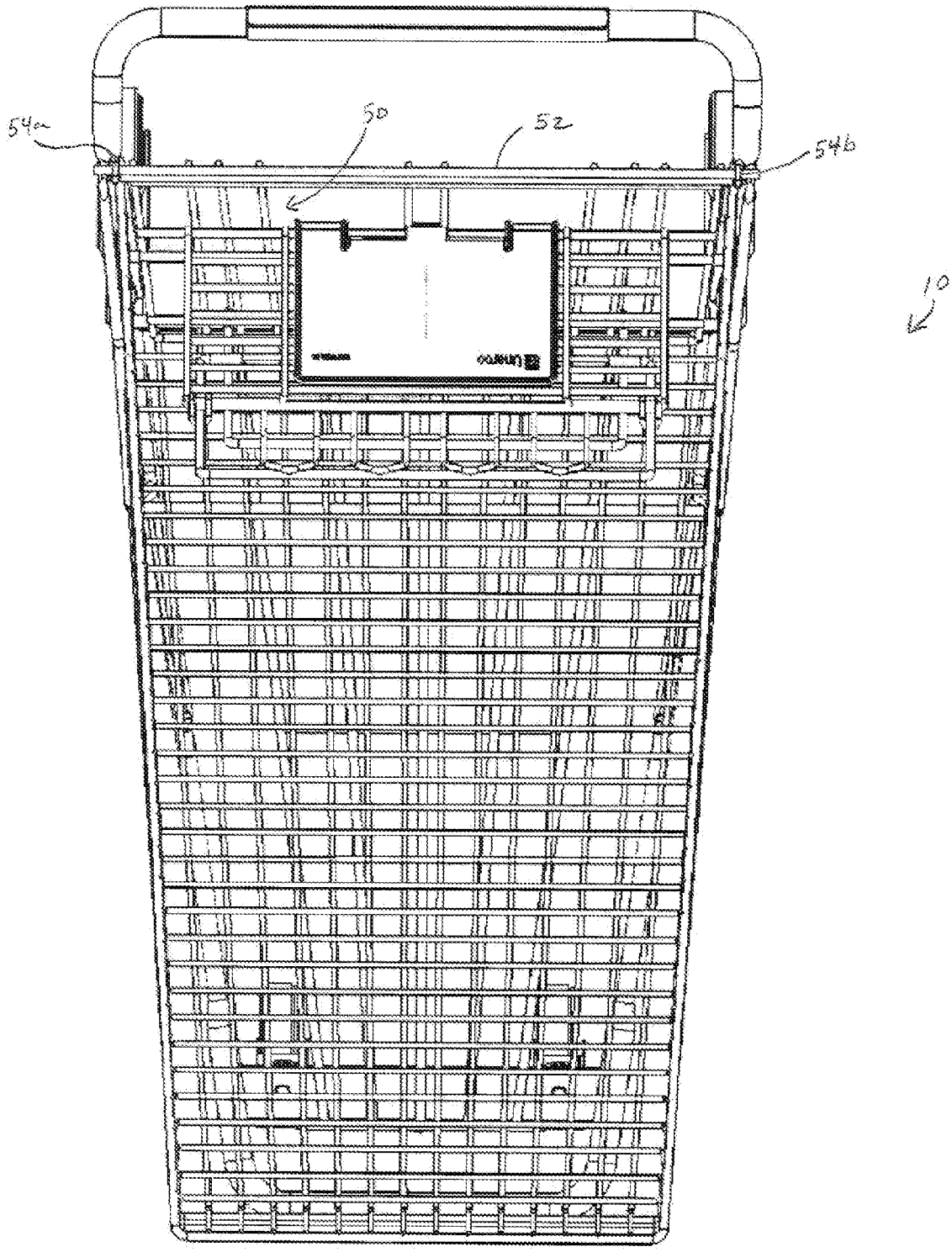

Fig. 3

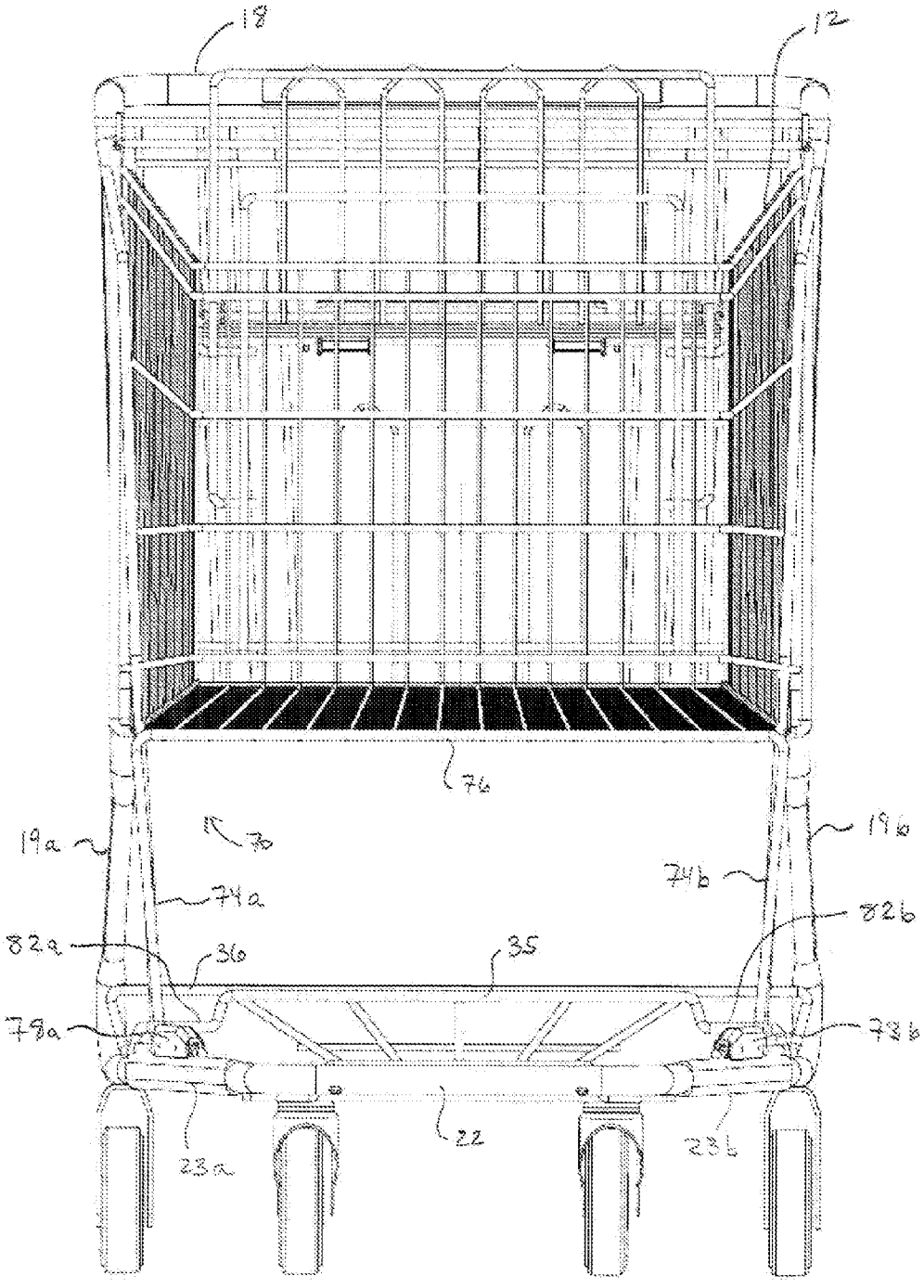

Fig. 4

SHOPPING CART

CLAIM OF PRIORITY

This application claims priority to U.S. Provisional Application No. 61/828,115, filed on May 28, 2013, the contents of which is incorporated herein by reference.

FIELD OF THE INVENTION

The present invention relates generally to shopping carts and, in particular, to a shopping cart that includes a support for the basket.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. **1** is a perspective view of an embodiment of the shopping cart of the present invention;

FIG. **2** is a side elevational view of the cart of FIG. **1**;

FIG. **3** is a top plan view of the cart of FIGS. **1** and **2**;

FIG. **4** is a front elevational view of the cart of FIGS. **1-3**.

DETAILED DESCRIPTION OF EMBODIMENTS

An embodiment of the shopping cart of the present invention is indicated in general at **10** in FIGS. **1-4**. The cart includes a basket **12**, preferably featuring a conventional metal wire construction. The cart also includes a frame, indicated in general at **13**, that forms a handle portion, indicated in general at **14**, and a chassis portion, indicated in general at **16**.

The handle portion **14** features a generally upside-down U-shape so that a griping portion **18** is formed at the top and a pair of upright members **19***a* and **19***b* extend down from the gripping portion. A pair of rear casters **20** are pivotally attached to the trailing ends of a pair of chassis side rails **23***a* and **23***b*, near their junction with the upright members **19***a* and **19***b*, respectively. A gate frame features a generally horizontal portion **17** that extends between the bottom ends of a pair of upright portions **21***a* and **21***b* that are longitudinally attached to upright members **19***a* and **19***b*.

The trailing edges of sidewalls of the basket **12** are secured to the upright members **19***a* and **19***b* of the handle **14** by the gate frame upright portions **21***a* and **21***b*, respectively, such as by welding or other fastening arrangements known in the art. The trailing ends of the basket floor wires are secured to the horizontal portion **17** of the gate frame.

The chassis portion **16** of the frame generally features a pair of side rails **23***a* and **23***b* that taper towards one another and are joined by a nose **22** at the front of the cart. As a result, the chassis **16** tapers to a narrower width dimension towards the nose of the cart. A front caster strip **24** is secured to and traverses the space between opposing sections of the pair of side rails **23***a* and **23***b* of the frame near the nose **22** and a pair of front casters **26** are attached to the front caster strip.

The handle gripping portion **18**, pair of handle upright members **19***a* and **19***b*, pair of chassis side rails **23***a* and **23***b* and nose **22** are preferably constructed from a single piece of steel tubing with a butt weld at the nose, handle, or any other suitable location for manufacturing. Other materials, both metallic and non-metallic, may be used in place of the steel tubing.

A lower shelf, indicated in general at **32**, is formed by a number of longitudinal wires **34**, attached by their leading ends to a front bracing wire **33** attached to the front caster strip **24**. A pair of rear tray wires **35** and **36** are attached across the trailing end portions of the longitudinal wires **34** and to frame side rails **23***a* and **23***b*, preferably by welding. As will be explained in greater detail below, the rear tray wires **35** and **36** have three purposes: they provide 1) the nesting stop 2) the lift feature for the caster lift wire and 3) the tray support.

Both the handle **14** and chassis **16** of the cart **10** are preferably formed from round tubing with most of the cross section deformed to an ellipse, as described in commonly owned U.S. Pat. No. 7,090,230, the contents of which are hereby incorporated by reference. With reference to FIG. **2**, the handle and chassis portions of the cart frame indicated at **37**, **38** and **39** are deformed or smashed to form an elliptical cross section.

Leaving handle gripping portion **18** as a round tube (as opposed to providing it with an elliptical shape) provides a familiar grip.

The shopping cart **10** is also provided with a pair of basket supports, indicated in general at **40***a* and **40***b* in FIGS. **1** and **2**. Each basket support **40***a* and **40***b* is preferably formed from a single wire, but a multiple piece structure may be used for each support instead.

As illustrated in FIGS. **1** and **2**, the each basket support features a bottom end that terminates in rearward-turned base portions **41***a* and **41***b* that are generally horizontal and welded to the pair of chassis side rails **23***a* and **23***b*, respectively. In addition to the base portions **41***a* and **41***b*, as illustrated in FIGS. **1** and **2**, the basket support wires **40***a* and **40***b* each feature a pair of forward tilting lower portions **42***a* and **42***b* and a pair of rearward tilting upper portions **44***a* and **44***b*. The top end portions **46***a* and **46***b* of the basket supports **40***a* and **40***b* tilt back at a greater angle (from vertical) than the rearward tilting upper portions **44***a* and **44***b* and terminate adjacent to the upper ends of the upright portions **21***a* and **21***b* of the gate frame.

As illustrated in FIGS. **1** and **3**, a gate, indicated in general at **50**, forms the back wall of the cart basket **12** and is constructed from a number of vertical and horizontal wires. The gate includes a generally horizontal top wire **52** with end portions that engage apertures **54***a* and **54***b* formed at or near the top ends of the upright portions **21***a* and **21***b* of the gate frame so as to form a hinge. As a result, the gate may be rotated upwards, about an axis defined by the top wire **52**, so that the basket portion of a second cart may be inserted nose-first into basket **12** in a nested fashion for storage and transport of the carts.

As is known in the art, a folding child carrier **56** includes a child seat and is pivotally attached to cross-wires of the gate **50**. The child carrier may be folded between a use position, illustrated in FIGS. **1-3**, for carrying a child, and a storage position where it is folded against the gate to provide increased storage capacity in the basket **12**.

With reference to FIGS. **1** and **2**, the forward tilting lower portions **42***a* and **42***b*, rearward tilting upper portions **44***a* and **44***b* and rearward tilting top portions **46***a* and **46***b* of the basket support are preferably connected to horizontal basket wires **60***a*, **62***a*, **64***a* and **66***a* and **60***b*, **62***b*, **64***b* and **66***b*, respectively, preferably by welding. Connections between the basket supports and some (or all) of the horizontal wires may optionally be omitted and alternative fastening arrangements known in the art, such as adhesive, fasteners, etc. may be used to secure the basket support to the horizontal basket wires.

A bridge member, indicated in general at **70** in FIGS. **1**, **2** and **4**, provides further support for the basket **12**. The bridge member, which is preferably constructed from steel wire, includes a pair forward-turned base portions **72***a* and **72***b* that are generally horizontal and are welded to the pair of chassis rails **23***a* and **23***b* to form caster lift wires. The caster lift wires

are preferably provided with covers **78***a* and **78***b*, which are preferably formed from plastic and secured in place by rivets **80***a* and **80***b*. As a result, caster lifts are formed on top of each chassis side rail **23***a* and **23***b*. The caster lift wires **72***a* and **72***b* are preferably formed from wire having a diameter of approximately 0.35 inches, but other types of wire may be used. The plastic caster lift covers **78***a* and **78***b* address paint adhesion/wear/rust problems.

As best illustrated in FIGS. **1** and **4**, the bridge wire also features a pair of generally vertical portions **74***a* and **74***b* that are joined at their top ends by a horizontal section **76** that supports the bottom of basket **12** and is preferably secured thereto by welding. The bridge member may be formed from a single piece of steel wire that is bent into the proper shape, but may alternatively be formed of multiple pieces that may not necessarily be steel wire.

With reference to FIGS. **1** and **4**, when the cart **10** is nested with a cart of a similar construction, the caster lift covers **78***a* and **78***b* of the rear-most cart engage the undersides of step-down portions **82***a* and **82***b* of rear tray wire **35** of the front-most cart so that the rear caster wheels **20** of the front-most cart are raised. The rear tray wire **36** of the front-most cart engages the pair of generally vertical portions **74***a* and **74***b* of the rear-most cart so as to serve as a nesting stop.

The shopping cart **10** described above supports the basket **12** so as to improve the cargo weight hauling capacity of the cart. The shopping cart **10** features a rugged, attractive and efficient construction. Embodiments of the cart allow a tight nesting distance (9 inches, as an example only) while maintaining a good structural support forward to support a high load (a 1200 pound proof load, as an example only).

The construction of the embodiment of the shopping cart described above also offers savings with regard to materials cost. In addition, the caster lift design is very strong yet economical to produce.

While the preferred embodiments of the invention have been shown and described, it will be apparent to those skilled in the art that changes and modifications may be made therein without departing from the spirit of the invention, the scope of which is defined by the following claims.

What is claimed is:

1. A shopping cart comprising:

a) a frame forming a handle portion and a chassis portion, where the handle portion includes a pair of upright members joined at their top end portions by a gripping portion and the chassis portion includes a pair of side rails;

b) a basket attached to the upright members of the handle portion, said basket having a bottom portion, said basket further having a plurality of horizontal basket wires;

c) a plurality of casters attached to and supported by the side rails of the chassis portion;

d) a pair of basket supports positioned on opposite sides of the basket and including:

i. a pair of base portions positioned parallel with and overlaying and connected to the pair of side rails of the chassis portion;

ii. a pair of forward tilting lower portions attached to the pair of base portions, said pair of forward tilting lower portions having a pair of top end portions attached to the bottom portion of the basket; and

iii. a pair of rearward tilting upper portions having a pair of top end portions attached to the handle portion of the frame and a pair of bottom end portions attached adjacent to the bottom portion of the basket and the pair of top end portions of the pair of forward tilting lower portions, wherein each upper portion is connected to a plurality of horizontal basket wires.

2. The shopping cart of claim **1** wherein the pair of base portions of the pair of basket supports each extend in a rearward direction and further comprising a bridge member including a pair of forward-turned base portions, a pair of generally vertical portions joined to the pair of forward-turned base portions and a generally horizontal section joining the pair of generally vertical portions, where the horizontal section supports a bottom of the basket and the pair of forward-turned base portions are positioned parallel with and are overlaying and connected to the pair of side rails of the chassis portion so as to function as a caster lift.

3. The shopping cart of claim **2** further comprising a pair of caster lift covers positioned over the forward-turned base portions of the bridge member.

4. The shopping cart of claim **3** wherein the caster lift covers are constructed from plastic.

5. The shopping cart of claim **2** wherein the bridge member is a single piece of steel wire.

6. The shopping cart of claim **2** wherein the vertical portions of the bridge member are secured to the pair of forward tilting lower portions of the pair of basket supports.

7. The shopping cart of claim **1** wherein the pair of forward tilting lower portions and pair of rearward tilting upper portions of the pair of basket supports are attached to the basket.

8. The shopping cart of claim **1** wherein the top end portions of the pair of rearward tilting upper portions of the pair of supports tilt rearward at a greater angle from vertical than remaining portions of the rearward tilting upper portions of the pair of supports; and

wherein each of the top end portions of the rearward tilting upper portions of the pair of supports are connected to at least one horizontal basket wire.

9. The shopping cart of claim **1** wherein each of the pair of basket supports is a single piece of steel wire.

10. The shopping cart of claim **1** wherein the frame is formed of tubing and the pair of side rails of the chassis portion of the frame each includes a portion having an elliptical cross-section with a generally vertical longitudinal axis.

11. The shopping cart of claim **10** wherein the pair of upright members of the handle portion of the frame each includes a portion having an elliptical cross-section with a generally horizontal longitudinal axis.

12. The shopping cart of claim **1** further comprising:

e) a pair of caster lifts secured to the pair of side rails of the chassis portion of the frame;

f) a lower shelf supported between the pair of side rails of the chassis portion of the frame, where a trailing end of the lower shelf is supported by a first rear tray wire;

g) said first rear tray wire being engaged by caster lifts of a second shopping cart having a construction similar to the shopping cart when the shopping cart and the second shopping cart are nested.

13. The shopping cart of claim **12** wherein the first rear tray wire features a pair of step-down portions that are engaged by the caster lifts of the second shopping cart when the shopping cart and second shopping carts are nested.

14. The shopping cart of claim **12** further comprising front caster strip, to which a pair of front casters are attached, and a front bracing wire attached to a leading end of the lower shelf.

15. The shopping cart of claim **12** further comprising:

h) a bridge member including a pair of forward-turned base portions, a pair of generally vertical portions joined to the pair of forward-turned base portions and a generally horizontal section joining the pair of generally vertical portions, where the horizontal section supports a bottom

of the basket and the pair of forward-turned base portions function as the caster lifts;

i) a second rear tray wire positioned rearward of the first rear tray wire, said second rear tray wire engaging the pair of generally vertical portions of the bridge member of a second shopping cart having a construction similar to the shopping cart to serve as a nesting stop when the second shopping cart and the shopping cart are nested.

16. The shopping car of claim **1** further comprising a bridge member passing horizontally under and supporting the bottom portion of the basket, said bridge member attached between the top end portions of the pair of forward tilting lower portions of the pair of bracket supports.

17. The shopping cart of claim **1** wherein the bottom portion of the basket includes a pair of generally horizontal basket wires positioned on opposite sides of the baskets and wherein the top end portions of the pair of forward tilting lower portions of the pair of basket supports are attached to the pair of generally horizontal basket wires and the bottom end portions of the pair of rearward tilting upper portions of the pair of bracket supports are attached to the pair of generally horizontal basket wires.

18. A shopping cart comprising:

a) a frame forming a handle portion and a chassis portion, where the handle portion includes a pair of upright members joined at their top end portions by a gripping portion and the chassis portion includes a pair of side rails;

b) a basket attached to the upright members of the handle portion, said basket having a bottom portion, said basket further having a plurality of horizontal basket wires;

c) a plurality of casters attached to and supported by the side rails of the chassis portion;

d) a pair of basket supports positioned on opposite sides of the basket and including:

i. a pair of base portions positioned parallel with and overlaying and connected to the pair of side rails of the chassis portion;

ii. a pair of forward tilting lower portions attached to the pair of base portions, said pair of forward tilting lower portions having a pair of top end portions attached to the bottom portion of the basket; and

iii. a pair of rearward tilting upper portions having a pair of top end portions attached to the handle portion of the frame and a pair of bottom end portions attached adjacent to the bottom portion of the basket and the pair of top end portions of the pair of forward tilting lower portions, wherein each upper portion is welded to a plurality of horizontal basket wires, wherein the top end portions of the pair of rearward tilting upper portions of the pair of supports tilt rearward at a greater angle from vertical than remaining portions of the rearward tilting upper portions of the pair of supports; and wherein each of the top end portions of the rearward. tilting upper portions of the pair of supports are welded to at least one horizontal basket wire;

e) a pair of caster lifts secured to the pair of side rails of the chassis portion of the frame;

f) a lower shelf supported between the pair of side rails of the chassis portion of the frame, where a trailing end of the lower shelf is supported by a first rear tray wire;

g) said first rear tray wire being engaged by caster lifts of a second shopping cart having a construction similar to the shopping cart when the shopping cart and the second shopping cart are nested:

h) a bridge member including a pair of forward-turned base portions, a pair of generally vertical portions joined to the pair of forward-tumed base portions and a. generally horizontal section joining the pair of generally vertical portions, where the horizontal section supports a bottom of the basket and the pair of forward-turned base portions function as the caster lifts;

i) a second rear tray wire positioned rearward of the first rear tray wire, said second rear tray wire engaging the pair of generally vertical portions of the bridge member of a second shopping cart having a construction similar to the shopping cart to serve as a nesting stop when the second shopping cart and the shopping cart are nested;

wherein each of the pair of basket supports is a single piece of steel wire; and

wherein the bottom portion of the basket includes a pair of generally horizontal basket wires positioned on opposite sides of the baskets and wherein the top end portions of the pair of forward tilting lower portions of the pair of bracket supports are attached to the pair of generally horizontal basket wires and the bottom end portions of the pair of rearward tilting upper portions of the pair of bracket supports are attached to the pair of generally horizontal basket wires.

19. The shopping cart of claim **1** wherein each upper portion is welded to a plurality of horizontal basket wires and wherein each of the top end portions of the rearward tilting upper portions of the pair of supports are welded to at least one horizontal basket wire.

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